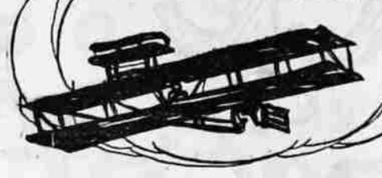
MAGAZINE SECTION THE OGDEN STANDARD MAGAZINE SECTION

OGDEN, UTAH, SATURDAY, SEPTEMBER 2, 1916.

A BIT OF DEBRIS, SOME PIANO WIRES, PART OF A MOTORCYCLE AND A $200 ENGINE MAKE AN AEROPLANE THAT FLIES



Knack of Lifting Heavy Machine Off Ground Described as Partly Skill, Partly Luck, but Mostly Will Power.

THE first homemade aeroplane constructed by a St. Louis boy recently made a successful flight at Creve Coeur Lake. "Home made" in this case means more than merely built in a well-equipped machine shop in our home city. It means actually built in a home and with just seven tools to be found in almost any cellar or woodshed.

Paul A. Gartland, the builder, is but 22 years old, but he has been building things ever since he can remember. During the day he sells fine texture silks in a downtown dry goods house. At night he hammers on machinery, handles oily engines, and acquires a color of the hands and arms unknown among silk salesmen.

Two years ago, Gartland had built about everything he could think of except an aeroplane. His iceboat at Creve Coeur Lake made as good time as any in the West, and was, in fact, the only one in this part of the West. His combined sailboat and motor launch, which he built throughout, with the exception of the engine, was an object of interest to all visitors to the lake.

But the creative genius could not stop here. Ordinarily, aeroplanes cost from $2000 to $30,000 to build. There must be some way to make one cheaper; some way by which a silk salesman could make one on the savings from his income.

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Studies Magazine.

THE youth had seen but two aeroplanes in his life. He had seen only one close enough to study. He subscribed for a magazine devoted to flying, and set about studying the complex problems that are necessary to make an object heavier than air lift itself off the ground and sail through space at sixty miles an hour.

After much study, the angles and balance were mastered, plans drawn and Gartland went to his cellar and began the actual construction.

Here the young aeronaut met with another stumbling block. The wood and fixtures used in the construction of aeroplanes are expensive enough under ordinary circumstances, but the European war had so affected metal prices that they were now far beyond his reach. He had to use substitutes.

The spruce and ash, which have been found the only dependable woods for aeroplane purposes, must be seasoned for several years under perfect conditions. This care in preparation costs money, and the prospective builder must part with much of his capital before he has anything to show except rough lumber.

But not so with Gartland. He went to a wrecking firm that had just torn down some of the city's oldest homes. In the piles of debris, spruce and ash sticks, seasoned for many years while forming a part of an antebellum mansion, were found and recognized. They were bought for a song and taken to 3725 Evans avenue, where Gartland shaped them in his basement shop to begin a new life of uselessness.

Expensive tools to be found in the aeroplane factories of the East were lacking in the Evans avenue cellar. This, however, never worries a good mechanic. Some men can make a better joint with a hatchet than others with a mortise saw.

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Few Tools to Work With.

GARTLAND had a hammer, a saw, a hatchet and, of course, a penknife. These were enough for a start. Later, he found use for his pliers, spoke shave and brace.

An engine bed was built by gluing together fifteen pieces of the seasoned wood. This gave added strength and prevented warping. Each of the ribs were formed by gluing four pieces of wood in a frame, which held them at the proper curvature to take the wind when covered with cloth. The skids were made in like manner of four glued segments.

An aeroplane engine of 60 horsepower was purchased for $200, and this proved the principal item of expense. When it arrived it was set in place, or, at least, in the place where the amateur builder thought it belonged. This cost him his first wreck.

Aluminum brackets and fittings were needed to join the wooden struts together. These can be bought, to be sure, but, since the war, one would look for them in jewelry stores. With a penknife and some soft wood models can be fashioned, and a foundry will cast them at one-third the cost of the manufactured article. Gartland solved his problem in this way.

The same is true of turnbuckles, without which an aeroplane would last about two seconds in the air. Perhaps it is not generally known, but the end of a motorcycle wheel spoke through a piece of sheet galvanized iron makes a strong, dependable turnbuckle, on which one may risk his life, as an aviator does every minute he is in the air.

Hinges of a special kind that will not split the frail wood are also to be had for aeroplane construction. Gartland found that he could make satisfactory ones out of common screw eyes and a bolt.

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Mother Sews Cover.

THIS much the young man said was easy. The cover for the frame came next, and even a silk salesman that can do virtually everything, found he could not sew. But Gartland has a mother, without whom the building of his plane would have been expensive, if not impossible. Mrs. Gartland cut and sewed the sail cloth to form the wings that were to hold her son in the air.

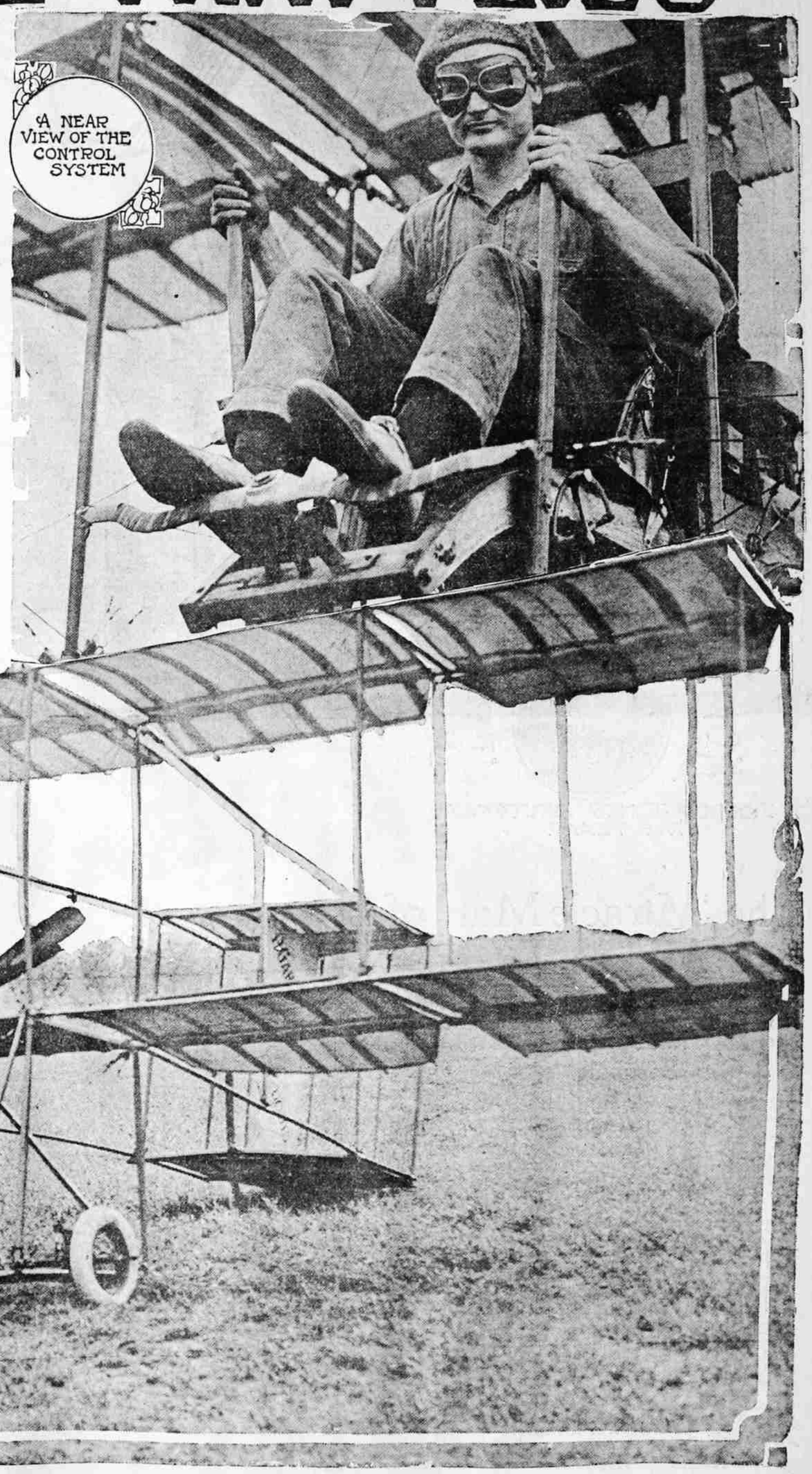
These were fastened to the frame by lacing. Awning eyelets were found to be too large. Gartland bought out the entire supply of shoe eyelets from a shoe manufacturer. These, 7000 in number, were riveted around the edges of the wings by hand.

Aeroplanes are not built in a day or in several days. This particular aeroplane was not built in the daytime at all, but by working sometimes until 4 o'clock in the morning for nearly two years the machine was almost finished.

At this point impatience and enthusiasm got the better of the mechanic, and he had it taken in sections to the western bank of Creve Coeur Lake. No levers to control the lifting tail and stabilizing planes had been attached. Gartland could not wait, however, and he wired the tail in a position to elevate the plane, and decided to trust to luck to descend. "Luck" proved untrustworthy.

On July 4 the engine was started and the plane rose swiftly. On account of the lack of balancing equipment and the position of the engine too far forward, it overturned. Gartland jumped, which probably saved his life. The plane landed a few feet away and nosed into the earth for 2 feet.

The entire plane was then rebuilt, the engine moved forward and controls attached. One lever to control six wings, a novelty unknown before in aeroplane building, was devised, and has proved efficient.



Alligators Fight to Death

TWO large alligators, which had made their home in the basin of a fountain in the grounds surrounding the Municipal Building at Wheeling, W. Va., for seven years, fought a duel to the death recently, the elder of the two succumbing to the teeth and tail of his younger companion.

The alligators were brought from Florida seven years ago by W. S. McElroy, then city treasurer, and were put in the fountain. But as the alligators grew the pool became too small to accommodate them, and they became peevish. Finally they decided to have it out, and fought before a large crowd of spectators, who backed their favorites heavily.